

# Labyrinth

6.111 Final Project

Laplie Anderson and Mihalis Papalampros

## Checklist

MiniMap - Shows the location of the player on the map. In cheat mode, shows the walls too

- Flipping the designated switch turns the map on/off
- The player icon corresponds to where the player is on the screen
- Moving the player moves the icon
- In “cheat mode” the entire map is revealed

RandomNumber – Generate a pseudorandom number

- Have it display (on labkit) a sequence of pseudorandom numbers in a range

MapGenerator – Generates a new playable random map every game

- After pressing reset, the MiniMap, in “cheat mode”, shows a new random map
- Each map shown has at least one path to the center

GameLogic – Updates player position based on user input

- Pressing up/down on the labkit moves the player forward/back
- If there is a wall in the path, the player is prevented from moving
- Pressing left/right turns the player
- Reaching the center of the map wins the game

DoubleBuffer – Displays one buffer while writing to the other

- Show one buffer while painting the other buffer (tested with by drawing columns)

ColumnRenderer - Draws a single column to the back-buffer

- Draw a column (whose attributes are set by the labkit switches) to the back-buffer then switching which buffer is displayed to show changes

SceneRenderer/VideoRenderer – Show 3D view

- Correctly show what the player should see as they move around the maze
- Walls/floor/ceiling all colored and displayed in a reasonable manner (ie: looks correct)

Time Permitting:

- Use a keyboard instead of the labkit controls
- Correctly update positions and angles for 2 players
- Display both players' views on the screen
- Add background music and/or win/begin sound effects
- Use texture mapping instead of single colors for walls
- Decrease brightness as distance becomes greater (long hall fades into black)